



Timing, Sequencing and Accumulation of Risk Factors Among Currently Incarcerated Men: Evidence of Developmental Cascades

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Timing, sequencing and accumulation of risk factors among currently incarcerated men:
Evidence of developmental cascades

Qualifying Paper

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Abstract

On December 31, 2013 there were over 2.2 million adults incarcerated in American prisons and jails (Glaze & Kaeble, 2014), up from 300,000 in 1980 (Alexander, 2012). A number of life experiences, including having an incarcerated parent (Aaron & Dallaire, 2010, Murray, Farrington & Sekol, 2012, Wildeman, 2009), being suspended from school (Christle, Jolivette & Nelson, 2005, Wald & Losen, 2003), and being detained as a juvenile (Aos, Lieb, Mayfield, Miller & Pennucci, 2004), have been studied as risk factors—experiences that increase the likelihood of incarceration. However, most studies rely on correlational analysis of large data sets which contain almost no information on the timing, sequencing and accumulation of risk (Borowsky, Ireland & Resnick, 2002), critical factors in understanding the contours of health and behavioral outcomes (Teicher & Parigger, 2015). In this study, 10 incarcerated men were interviewed about their memories of school and then asked to produce a life graph (D'Sa, 2013)—a chronological sequence of risk factors they may have experienced—and to answer questions about their age when the risk first occurred. The range of reported risk factors was 5 to 15 (mean = 11/21), with the greatest number of first-time risks accruing at age 12 and 13. In addition to risk factors, participants reported a number of conditions commonly associated with trauma or toxic stress in childhood, such as social isolation and attention deficits. From these descriptions, a number of developmental cascades are proposed.

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Introduction

One in 100 American adults is incarcerated (Travis, Western & Redburn, 2014). Whether measuring by rate or number, adult incarceration has more than quadrupled since 1980 (Alexander, 2012) at a cost of \$80 billion per year (Schmitt, Warner & Gupta, 2010). Social costs include: poverty for families (Geller, Garfinkel, Cooper & Mincy, 2009); foster care and permanent separation for children of incarcerated parents (Arditti, 2005); and decreased educational attainment among young people in neighborhoods with high incarceration rates (Hagan & Foster, 2012).

Several disciplines offer theories to explain the pathway to prison; though distinct, all turn on accumulation of risk that fuels poor intermediate outcomes and/or anti-social behavior, ultimately resulting in incarceration. As Arthur et al. (2002) note:

The robustness of the relationship between exposure to an increasing number of risk factors and the increasing likelihood of a variety of problem behaviors is striking. Some have suggested that the number of risk factors present is a more powerful predictor of problem behavior than the specific risk factor present (p. 576).

Nevertheless, little is known about the timing and sequencing of risk factors (Borowsky et al., 2002, NIMH, 2009, Rogosch, Oshri & Cicchetti, 2010). From a developmental perspective, timing is critical to understanding how outcomes unfold over time (Teicher & Parigger, 2015). Incorrect assumptions can lead to poor policy; for example, a recent study on court involvement among chronically truant youth called into question the general assumption that suspension from school follows from skipping rather than the reverse (George, 2011).

In statistical analysis, the relationship between variables, such as the one between truancy and suspension, is assumed or hypothesized based on past study. Regression analysis cannot reveal the timing or sequence of variables (Bollen, 1989). Rather, study

of lived experience is necessary to form coherent theory of complex social issues (Seidman, 2006). Yet, incarcerated individuals are rarely included in research about pathways to prison (Jacobi, 2011, Winn & Behizdeh, 2011). Although a few studies of women and juveniles are available, I have been unable to identify any qualitative study involving currently incarcerated men and their lived experience of school and risk factors. Thus, extant frameworks such as cradle-to-prison pipeline and the school-to-prison pipeline cannot be fully evaluated; we simply do not know how risk has operated in the lives of male felons. The identification of risk factors has failed to produce effective prevention strategies (NIMH, 2009). Thus, the goal of this study is to improve theory with respect to the sequence and accumulation of risk among currently incarcerated men.

Literature Review and Conceptual Framework

Risk factors for outcomes such as substance abuse and incarceration are “those characteristics, variables, or hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected at random from the general population” will have the experience (Mrazek & Haggerty quoted in Arthur et al., 2002, p. 576). This study draws on literature in public health, education and prevention science to identify three categories of risk: adverse childhood experiences (ACEs), school-related events, and social-behavioral risk. The 22 risk factors tested and 21 reported here,¹ such

¹ The conceptual model below includes 22 risk factors. However, in order to address issues raised in the IRB process, physical and sexual abuse were collapsed into “unsafe at home” during the life graph process. I also separated a single suspension from school from multiple suspensions and parental alcoholism from parental drug use during life graphs and recombined them for reporting purposes. In the final reporting, there are 21 reported risks as I was able to separate unsafe at home into the original constructs through interviewing and removed foster care, most notably because it is the procedural/legal outcome of severe child abuse or neglect, not a social or behavioral risk factor that participants engage in through their own social or behavioral choices.

as child abuse, truancy from school, and selling drugs are not separate or discrete in the lives of those who experience them; rather, consistent with developmental cascade modeling (Sitnick, Shaw & Hyde, 2014, NIMH, 2009), hazards in one area of life are manifest in other domains.

Adverse childhood experiences (ACEs)

ACEs are risk factors reflecting family dysfunction and interpersonal violence and are defined as: physical, sexual and emotional abuse; neglect; substance abusing, mentally ill, depressed or suicidal parent; witnessing domestic violence; parental divorce or separation; and incarcerated family member (Anda, Felitti et al., 2006).

Accumulation of ACEs is associated with lifelong physical, mental, behavioral, cognitive and relational health outcomes (Anda, Felitti et al., 2006, Felitti et al., 1998), including a number of intermediate outcomes ultimately associated with incarceration. For example, using the population attributable risk formulation, 56% of illicit drug use and 64% of addiction to illicit drugs is attributable to ACEs (Dube, Felitti et al., 2003); half of adult incarceration is associated with drug use, possession or distribution (Alexander, 2012).

ACEs shape brain development (Anda, Felitti et al., 2006, Teicher et. al, 2003) in ways important to schooling; associated changes in neurobiological development may impede in memory, self-concept, information processing, self-regulation and behavior (Cole et. al, 2005) as well as the development of narrative memory (Brown et al., 2007, Edwards, Fivush, Anda, Felitti & Nordenberg, 2001), a critical component in literacy (Fivush, Kuebli & Clubb, 1992). The prevalence of ACEs among incarcerated men has not been documented; however, juvenile offenders (Baglivio et al., 2014) and incarcerated women (Messina & Grella, 2006) experience more ACEs on average than

participants in the ACE Study. Relationships among ACEs, school and incarceration underlie the “cradle-to-prison pipeline” theory (Edleman, 2006).

School Related Risk Factors

Many school experiences are associated with poor life outcomes, including incarceration. Referral to special education (Krezmien, Mulcahy & Leone, 2008, Tulman & Weck, 2009, Wald & Losen, 2003), grade retention (Christle, Jolivette & Nelson, 2005, Jimerson, Anderson & Whipple, 2002), suspension (Baker et al., 2001, Wald & Losen, 2003) and truancy (George, 2011, Hawkins et al., 2000) are each associated with incarceration, giving rise to the explanatory “school-to-prison pipeline” theory (Bahena, Cooc, Currie-Rubin, Kuttner & Ng, 2012, Wald & Losen, 2003).

There is also evidence that these school-related risks are intermediate outcomes of ACEs, suggesting a system of cascading risk. For example, Grevstad (2010) found that ACEs were associated with early difficulty at school, suspension from school, mental health and substance abuse problems prior to entry into the juvenile court system. George (2011) found that 24% of youth referred to Washington State courts due to chronic truancy had three or more ACEs. The relationship between school-related risk factors and incarceration likely involves a series of mediations. For example, grade retention, suspension and truancy are each associated with dropping out of school, which is associated with incarceration. The majority of incarcerated adults have no high school credential upon first entry to the prison system (Greenberg, Dunleavy & Kutner, 2008).

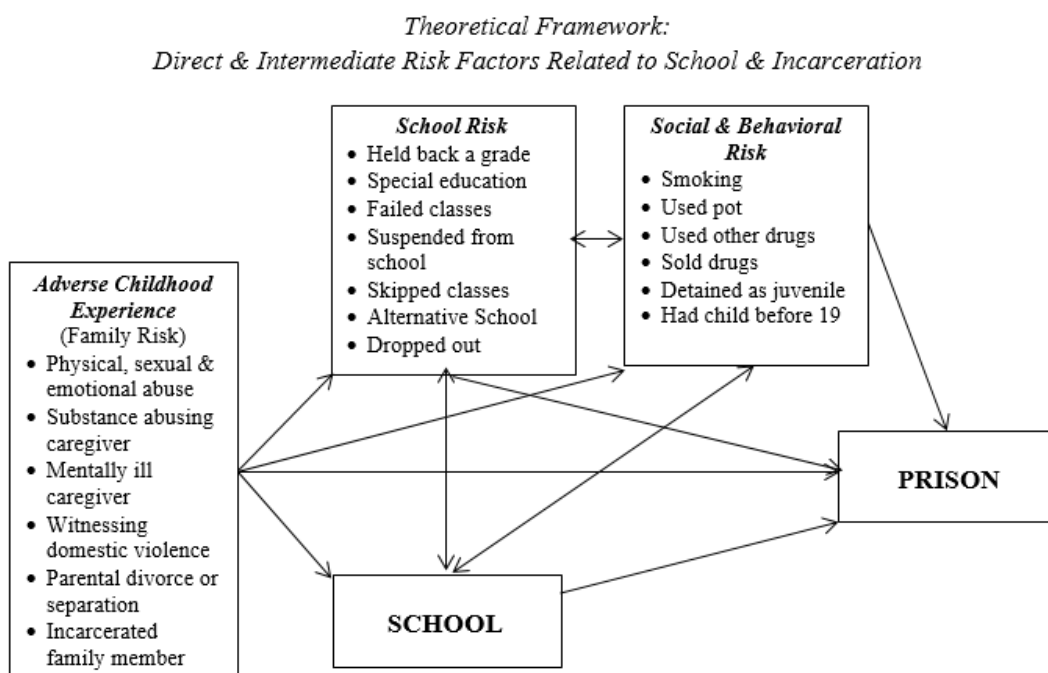
Social and Behavioral Risk Factors

Prospective studies have identified specific risk and protective factors for entry into the juvenile justice system (Arthur et al., 2002). These include alcohol, tobacco and

other drug (ATOD) use (Hawkins, Catalano & Miller, 1992), and attendant behaviors, such as selling drugs (Herrenkohl et al., 2000). Juvenile incarceration, in turn, increases risk for adult incarceration (Holman & Zidenberg, 2006, Wald & Losen, 2003); three-fourths of adults in prison were detained as juveniles (Aos, et al., 2004).

Becoming a parent before age 19 is also risky (Berglas, Brindis & Cohen, 2003). Strongly associated with ACEs (Anda, Chapman et al., 2002), teen paternity is predictive of school failure, including dropping out (Allen, Philliber, Herrling & Kuperminc, 1997). Again, accumulation of risk appears to be important to incarceration: failure to complete high school is strongly associated with adult incarceration (Christle et al., 2005) although a high school diploma alone has lost some of its protective value as mass incarceration has accelerated in the United States (Arum & Beattie, 1999).

Although we lack a robust literature on the timing and sequencing of risk (Maschi, 2006), the inter-relationships among of risk factors within the literature leads me to this conceptual framework:



Research Questions

I am guided by the question of how the lived experience of currently incarcerated men may contribute to our understanding of incarceration, and specifically:

RQ1: What do ten currently incarcerated men report about the sequence, timing and accumulation of: a) ACEs, b) school risk factors and c) social and behavioral risk factors?

RQ 2: How does timing, sequence and accumulation of risk reported illuminate our understanding of school-to-prison phenomena?

RQ 3: To what extent might the life graph method support future research in this area?

Methods

Research Context

This study was conducted within a minimum security prison in the western United States. Located approximately one hour from the nearest population center, the access road to the prison runs through forest land. A bumpy mile or two past an official-looking “You are leaving the public road system” warning, stencil-and-spray paint signs spring up: “No Hunting.” “No Shooting.” “Slow Down.” They are more suggestive of a recluse than a 500-bed prison. Then, over one last knoll, the prison’s farm comes into view and a moment later, Rolling River Correctional Center (RRCC)² can be seen—white, clapboard buildings enclosed by a chain link fence topped with looping razor wire.

² Although over 2 million adults are incarcerated in the US at the time of this writing, western states typically have only one or two minimum security prisons. Thus, in order to maximize both privacy and confidentiality of the men who shared deeply personal information with me, I mask the identity of the state where this study took place, the name of the prison, and the individual participants. In addition, I refer only to policies and demographic trends that exist in multiple states west of the Mississippi River; I exclude California because of its unique status with respect both to prison policy and population density.

RRCC is a hive of activity. Golf carts zoom around and uniformed personnel move purposefully on both sides of the perimeter. Men in orange jumpsuits line up to move through the chute; this large outdoor enclosure, where people and vehicles are searched before entering or exiting the secure area, is both surrounded by and topped with chain-link fencing. Behind the fence, men in khaki pants and t-shirts or sweatshirts specified by the uniform code play basketball, assemble around picnic tables, and exercise the resident dogs being trained as service animals.

All men incarcerated at RRCC are within two years of release to the community and have been placed here to prepare for reentry through intensive educational and vocational programming. Most offenders at the facility have “earned” their spot through good behavior and programmatic participation at other state facilities. A few men, including one in this study, come directly to RRCC from reception due to the short length of their sentence.

Men who have earned their way here enjoy a high degree of freedom and unique opportunities to earn money, incentives intended to promote good behavior and smooth re-entry. Men cross the perimeter for a variety of reasons, including work, recreation and farming. Their privileges include paying jobs in the community and on the lines of summer wild fires. On the day the study begins, a sign in the administration building announces “1845 days since our last escape.”

Nevertheless, RRCC is a prison, which presents unique challenges in research design and data collection. Houchins, Jolivet, Shippen & Lambert (2010) argue that researchers in prison are at once subject to the authority of the institution and serve as an extension of that authority. For example, I was subject to search and had to surrender all

but a digital recorder, one pen and a legal pad on entry to RRCC. My movement was supervised and constrained. Yet prison routines were organized to support my work, and prison resources, primarily in the form of personnel, were dedicated to ensure my security. Thus Houchins et al. (2010) suggest that participants—as well as their peers in prison—may come to view researchers as allies of prison authority. Further, federal law places strict limitations on conducting research on incarcerated persons (Musoba, Jacob & Robinson, 2014). I looked to the established code of ethics to operationalize voluntary participation from first contact through consent to final interviews. For example, the recruitment process was developed in a series of transactions involving: the IRB, the state Department of Correction (DOC) and me; the prison administration and the DOC; the prison administration and me; and finally, the IRB and the study protocol.³

I approached this study as a partnership among stakeholders, including non-participating men incarcerated at RRCC whose interests needed to be considered. To be the best possible partner,⁴ I made my non-negotiables clear. For example, I told the warden he could not recruit or answer questions about the study for prospective participants because of his authority. I made time for administrators to weigh in on all issues of security.⁵ I also made efforts to learn and follow prison protocols, and took steps to minimize my footprint and use of prison resource; therefore, while I would have

³ Dr. Stephanie Jones played a critical role in developing the process for aligning statute-driven processes at the state level with standard IRB process. The provisional approval strategy she suggested facilitated partnership among the stakeholders and produced a highly ethical design.

⁴ The head of an 18,000-person state agency once told me that good partners recognize the roles of others at the table and respect the mission and legal constraints they face. I sought to carry that lesson forward, and I believe that this study would have proceeded differently had I not done so.

⁵ While I am often asked to describe security measures, I believe it is inappropriate to do so, in part because disclosure might compromise future efforts at safety. The measures taken were intentionally designed to meet the dual needs of participant confidentiality and researcher safety. No correctional officer was present in the interview space and I was provided multiple means to summon help if needed. I was positioned to hear radio traffic used to maintain personnel safety within the facility. At no time did I feel unsafe.

preferred fewer interviews on each trip to the prison, I conducted all 10 first interviews on three back-to-back days when asked to do so. In addition to a successful study, I am able to enjoy an on-going relationship with the prison.⁶

Researcher Positionality

Because the research problem pursued here required me to enter the prison context and interact directly with study participants, best practice suggests that I offer researcher reflexivity or positionality, a description of how my life, work, and cultural experiences shaped my research decisions and interpretations of the data (Creswell, 2013). Beginning with demographic features is uncomfortable; I experience these markers as inadequate factoids. And yet, it is customary to summarize study participants in this way, as a descriptive starting point. Thus, I will begin here. I hope I move quickly past those details to more adequately fulfill what Walcott (2010) calls the readers' "right to know about us" (p. 36). It is my goal to equip readers to make inferences of their own about quality, validity and utility of this study.

I am white, Jewish and female. But even at 50, I continue to identify most closely with my childhood in the US Army, the dependent of a sometimes high functioning/ sometimes not Vietnam veteran. Many of the issues raised by the participants in this study are familiar to me: residential mobility, academic mobility, social isolation within the classroom, a sense of constant danger at home. Like the ten incarcerated men in this study, I skipped a lot of school; I worked—two jobs—more than I attended class; I was

⁶ Although I cannot reveal the warden's name, I wish to acknowledge the myriad ways in which he demonstrated leadership and thoughtfulness throughout the study, making efforts to learn about the research process and IRB requirements. He established a team to work on questions of voluntary participation, privacy and confidentiality in a high-security context. He did his due diligence with respect to me as a researcher. We maintain our relationship and continue to discuss questions of interest to us both.

pushed out my senior year—into an experiential education program that likely saved my life.

I took my first political job at 17, as a communications intern in the office of my state's governor. I dealt mostly with correspondence, but I was also privileged to attend press conferences and cabinet meetings. Following college I became a school teacher, but frustrated and concerned by the lack of resources available to help the most vulnerable students, I returned to government, eventually serving in professional education and policy positions in all three branches. Over time, I became a specialist in issues related to juvenile and family court—child abuse and neglect; divorce and child custody; substance abuse, domestic violence and the interplay between them; juvenile justice; and chronic truancy. For a decade, I supported prevention work in these areas. Finally, while working for the state legislature, my responsibilities expanded to include: public assistance and disability from work, mental health, adult corrections, and sex offender registration.

Through my political experience, I learned that despite common ground on issues, deep differences regarding the contours of both problem and solution abide. For example, policy makers of all political stripes agree that children are vulnerable and need protection from harm, but many disagreements remain with respect to the line between abuse and rightful “discipline” by parents. Bi-partisan work (and even work within a single party) required sensitivity and responsiveness to multiple perspectives. Complex problems required me to understand stakeholder interest and opposition; crafting enduring solutions required me to leverage those positions.

Over the years, I have been present in the full spectrum of criminal justice facilities, including juvenile detention centers, forensic mental health wards and high-medium- and low-security prisons. I have entered prison as a worker, a visitor subject to standard search and questioning protocols, and as a VIP waved passed metal detectors to be accompanied by the superintendent or warden. I have experienced prison mental health units, medical and dental clinics, and the shops where offenders make street signs and, per the stereotype, license plates. I have never been in a federal prison or a super max facility. Nor have I been inside any occupied maximum security unit, though I have had brief contact with men who are held under “close custody.” There are places I would never choose to go again. First among these: the penal nursing home.

My core epistemological stance reflects this life experience. Standpoint epistemology holds that while objective truths do exist, knowing is partial and determined by the knower’s worldview and position, or standpoint. An individual’s standpoint is, at least in part, forged not chosen:

In societies stratified by race, ethnicity, class, gender, sexuality, or some other such politics shaping the very structure of a society, the activities of those at the top both organize and set limits on what persons who perform such activities can understand about themselves and the world around them (Harding, 1992, p. 442).

That a “specific matrix of physical location, history, culture and interests” (Sprague, 2010, p. 85) shapes knowledge production may be viewed as an issue of objectivity (Harding, 1992), but not as a matter of natural versus social science. Rather, as Kuhn (2008) argues, similar to social scientists, natural scientists across history have failed to interpret their results as new discoveries because the existing paradigm, or prevailing beliefs about legitimate questions and legitimate methods, prevented them from doing so. Likewise, the history of science is full of innovations made and rejected as

fantastical, impossible or sacrilege at the time of invention, only to be “discovered” years or even centuries later, when social norms rendered them comprehensible. In these cases, later knowledge (re-)producers have generally received credit (Johnson, 2010).

At the core of standpoint epistemology, subjects of knowledge are diverse and situated within multiple contexts (Harding, 1992). Concrete experience is valued, and reflection on that experience is held as a valuable source of knowledge (Sprague, 2010) that narrows the distinction between subject and object of knowledge (Harding, 1992). Because I ascribe to standpoint epistemology and find it particularly relevant in this context, I approached this study as exploratory and inductive.

Sample Selection

Participation was determined by purposeful selection, a reasoned approach that accounts for feasibility, access, ethics and validity (Maxwell, 2013). All inmates at RRCC as of July 1, 2014 were eligible to participate provided they had attended American schools for at least three years, were scheduled for release after October 1, 2014 (the conclusion of the interview period), were sufficiently fluent in English to participate without the assistance of a translator, and were first committed to this state’s DOC after January 1, 2000. Due to resource constraints, interviewing was limited to the first ten men who volunteered. A closed-response survey was prepared for use with all excess volunteers, although it was not ultimately needed since exactly ten men volunteered during the initial recruitment period.

Given the state’s determinate sentencing scheme and the offenders’ presence in a minimum security prison, utilizing first conviction date ensured study participants: were not subject to the state’s persistent offender laws (e.g., “three strikes”); had not

committed a most serious or violent offense, such as premeditated murder; and were not subject to an enhanced sentence for use of a firearm, drive-by shooting, or aggravating conditions such as an extremely vulnerable victim. Most adults incarcerated in the United States commit non-violent offenses (Alexander, 2012); thus, using the January 1, 2000 commitment date ensured the sample would reflect the majority along this important dimension. In addition, this criterion allowed me to balance competing needs of the study in two critical areas. First, because serious violent offense and aggravating circumstances were screened out by determinate sentencing protocols, I could positively rule out extreme pathology or particularly heinous criminal histories that might threaten validity without examining participants' criminal histories; instead, I could offer to participants the ability to control what they wanted to share about their conviction. In addition to placing a premium on voluntariness, this approach helped to maintain the focus of the study on educational experiences and risk factors. Second, use of conviction date helped to contextualize findings within current corrections policy. Many states implemented correctional reforms beginning in the 1990s. Revealing the specifics of those reforms could identify the state and therefore, the prison. Using date of first adult conviction ensured that the participants' experience with incarceration, including juvenile detention, occurred post-reform without compromising my commitment to confidentiality.

To maximize voluntariness of participation and privacy of eligible non-participants, tasks related to selection were divided in strategic ways. Personnel at DOC headquarters generated a list of all RRCC inmates meeting the study criteria; DOC was not informed of participants. The list of eligible individuals was forwarded to one

official at the prison, who remained blind to the identity of participants. Individuals who were aware of participants' identities, such as correctional officers responsible for managing "call outs" to the study location, remained blind to the full list of eligible individuals, as did I. Further, no DOC or prison personnel had access to participant responses, nor did they have access to the crosswalk between participants' actual names and pseudonyms assigned.

Recruitment

RRCC selected a liaison to assist with recruitment, ensuring the individual had no responsibility in deciding loss of privileges, change in custody status, revocation of earned release time, or movement to a different prison in response to an alleged violation of rules at RRCC. The liaison became the sole individual who knew the identities of all eligible individuals and all participating individuals. As such, the liaison contacted all eligible individuals, providing IRB-approved information about the study via the prison's electronic communications system and answered questions as requested by potential participants. Interested individuals completed a short form to indicate their desire to proceed. No compensation or incentive was offered or given.

Participants⁷

Ten men ages 22 to 49 participated in this study during their incarceration at RRCC. Eight participants are white; two are Asian. Three participants are children of

⁷ During consent, I explained that I would assign pseudonyms in order to protect the confidentiality of participants. One individual demanded that I use his real name saying, "It is my story. I deserve to have my name on it." After consulting with the IRB, I agreed and we signed an amended version of the consent form when I returned to the prison for second interviews. I deeply respect this participant's decision. I know he is committed to transforming his future by being honest about his past. Nevertheless, I am an early career researcher; I do not yet fully understand where this information will go, how it will be used, or how it might be understood. Thus, I do use nine pseudonyms and one real name in this paper. Out of an abundance of caution, I do not reveal which is which.

immigrants; of these, one immigrated to the United States at age 6, the others were born in the US. Two of these men grew up bilingual. All other participants spoke English as their first language.

Participants' education.

Participants attended schools in seven states. Five attended majority-minority schools for at least a few years, including majority African-American, majority Hispanic, majority Asian, and majority Native American schools. One participant attended a private Catholic school until high school. Consistent with national statistics indicating that 53% of incarcerated adults have no high school credentials upon first entry to prison (Greenberg et al., 2008), six participants left school without graduating and five of those entered incarceration without a GED.

Several participants described conversations between home and school regarding a possible diagnosis ADD and/or ADHD; two families allowed treatment and three reported self-medicating with illicit drugs. One participant received English as a second language services throughout his education. One reported receiving special education services for a diagnosed learning disability; three additional participants could not recall being referred to special education, but described school settings consistent with a substantially separate classroom, such as a teacher-student ratio of 1:6. One participant described reading problems consistent with dyslexia, "I couldn't read and comprehend what I was reading. And I still can't very well... it takes me five times going back to the book." He did not receive support services or special education. A summary of educational attainment is shown in Table 1.

Table 1. Educational Demographics of Participants

Participant	Education	Reason for leaving school	GED
Cameron	11 th grade	Child	In prison
Ian	MBA	N/A	Not needed
Jason	HS Diploma	N/A	Not needed
Jerry	Unclear	Intermittent schooling after family crisis at age 8	In prison
Keith	12 th grade	Did not complete senior project	In community
Nathan	BS	N/A	Not needed
Ricky	10 th grade	Did not return from suspension	In jail
Robert	12 th grade	Not allowed to return from suspension	In prison
Russell	Some college	Financial strain	Not needed
Theo	11th	Did not return from suspension	In prison

Participants' offenses and incarceration.

Although participants were told during consent that I would neither ask about their criminal history nor use readily available tools to access the public record of it, every participant volunteered at least some information regarding his conviction. Six reported incarceration for drug-related offenses, two for property crimes committed to facilitate access to drugs, and two for other offenses. Two participants reported serving time in multiple jurisdictions for their offense. Although many participants said their sentence was excessive or unfair, none claimed innocence.

Procedures

Privacy, confidentiality and movement within the prison.

Participation in a study may affect power structures within the prison (Houchins et al., 2010). Thus, to ensure privacy—knowledge by others that an individual did or did not participate in the study—interviews were held in the education building. A range of offenders use this space to access the library, attend education, attend religious services, participate in 12-steps programs, and receive various kinds of vocational and re-entry

supports. Confidentiality was preserved by holding interviews in a private office. Interviews did not take place during “cease movement,” lock down, or other heightened security. First interview transcripts and photos of life graphs were returned to participants. Because no item in an inmate’s possession is treated as private, participants were authorized to mail transcripts home without cost or to shred them, if desired.

Interviews and life graphs.

Each participant completed two one-on-one interviews held in a private office. Prior to consent each participant was given the opportunity to ask any questions he had about the study or researcher. The written consent scored below fifth grade level on Flesch-Kincaid. Based on the prevalence of low literacy in prison, consent forms were read aloud and explained. Consent was reviewed and affirmed at the beginning of second interviews. All volunteers completed both interviews.

First interviews lasted 40-50 minutes and consisted of open-ended questions intended to elicit concrete memories of school. The core questions were: “If we had your school records here to look at what would they tell us about where you went to school and how much schooling you received?” and “What do you remember about school? What really stands out for you?” Follow-up questions prompted participants to think about the particulars of school experience, such as recess, lunch time, and taking the bus or walking to school. Although not the focus of first interviews, participants spontaneously volunteered information regarding risk factors of interest when it was relevant to their story of school. For example, Jerry began with adverse childhood experiences, saying:

I think for me, a lot happened before I even went to school, you know, in my family setting, that affected my schooling...As far back as I can remember,

maybe four years old, my father was an abusive alcoholic and my mother was an enabler.

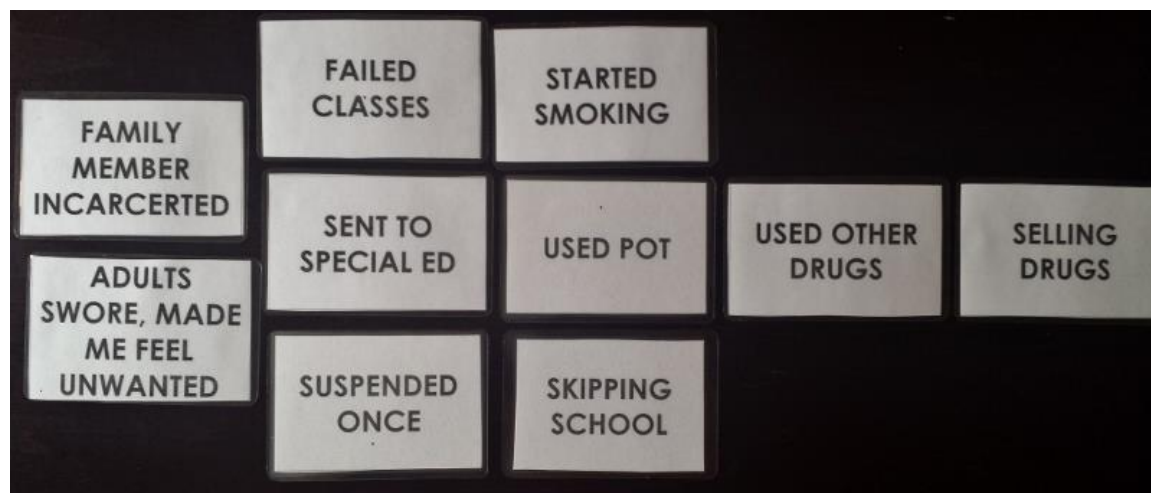
Ricky offered this account of school-related risk: “I ended up dropping out in tenth grade. Tenth, eleventh grade, something like that. I didn’t end up getting my GED until I went to jail.” And Nathan offered this information on the social and behavioral risk factors he engaged in: “I took a couple of years of chemistry. I never stopped my interest in drugs. I had a little chemistry lab going on. I got caught making MDMA (Ecstasy).”

Second interviews, approximately 50 minutes in length, were held 10 to 14 days after first interviews, and combined semi-structured interviewing with life graphs (D’Sa, 2013). During the period between interviews, I listened to the recorded interviews and generated clarifying questions, which I asked during the opening stages of second interviews. After those questions, participants constructed life graphs (D’Sa, 2013) using risk factors identified in the conceptual model. Each risk factor was printed on a laminated index card, and cards were laid out in a random array on a desk.⁸ Participants were told that research sometimes associated educational attainment or incarceration with these risk factors, and were then asked to select all “cards that happened to you.” Unselected cards were taken away. The participant was then asked to place the cards he selected in chronological order based on the first time the risk occurred. When multiple risks occurred at the same age, the cards were arranged vertically. If a participant failed to select the card for a risk factor he mentioned in first

⁸ To satisfy IRB concerns, I collapsed child sexual and physical abuse into a single card “unsafe at home.” During the interview, I asked participants to specify the threats to safety they experienced and report the type of abuse in the text here. In keeping with the ACE Study, I combined parental alcoholism and illicit drug use into “parental substance abuse” for purposes of analysis. No participant select “sent to foster care;” in addition, entry to the child welfare system is a procedural outcome of severe abuse and/or parental incarceration. Thus, I eliminated this risk factor from totals in the analysis resulting in a total of 21 risk factors: 8 adverse childhood experiences (ACEs), 7 school risk factors and 6 social/behavioral risk factors.

interviews, I asked whether he meant to include it, and if he did, it was added. There was some back-and-forth and occasional reorganization as participants asked clarifying questions and reflected on their life experience.

Figure 1. Example Life Graph—Jason



When the participant was satisfied with his life graph, he answered a series of questions about each risk factor, including the age at which it first occurred and how the experience has affected his life. For factors involving others, such as “family member incarcerated,” the participant was asked to identify his relationship to the person. For questions such as mental illness and drug use, he was asked to provide specifics, such as the diagnosis as he understood it or the drugs involved. Participants sometimes reversed or moved cards into a vertical position as they talked through the events of their lives.

After discussing each risk factor, participants were asked whether anything was missing and whether they had experienced risks not reflected in the cards. From time to time, participants would ask why no positive factors were included. I invited these individuals to tell me about the positive factors in their lives.

In the closing portion of the interview, I asked questions about education writ large, including recommendations for improving schools. I asked each man how he might make sense of past research findings associating incarceration with educational attainment given his life experience. Finally, each participant had the opportunity to provide information and ask questions of his own choosing.

Member checking, “systematically soliciting feedback about your data and conclusions” from participants (Maxwell, 2010, p. 283) is a best practice, but may be difficult to achieve. In this case, limited access to the prison, release of some participants, and prohibition against post-release contact with participants precluded full member checking. Further, incarcerated individuals have no right of privacy: prison personnel may, at any time, seek, review, read or confiscate papers in an offender’s possession or assigned space. Thus, when I asked for the opportunity to return transcripts to participants, the warden proposed procedures intended to protect confidentiality to the highest degree possible. Each participant received an envelope with a copy of their first interview transcript and a photo of their life graph. I included a cover memo addressed to prison personnel (who might in the future seize the document) explaining that the papers constituted an artifact from a study the individual participated in. All transcripts and life graphs used pseudonyms.

Each packet included a letter of thanks from me to the participant. I explained that he could make corrections, deletions or additions by corresponding with me using contact information in the consent form. Procedures for sending a letter cost-free were in place and explained at the conclusion of the second interview. No participant has followed up in this way; one man did ask the study liaison for a full transcript of his

second interview. The men were also offered the option of contacting the study liaison if they wanted to mail their transcripts home free of charge or shred them.

Analytic Approach

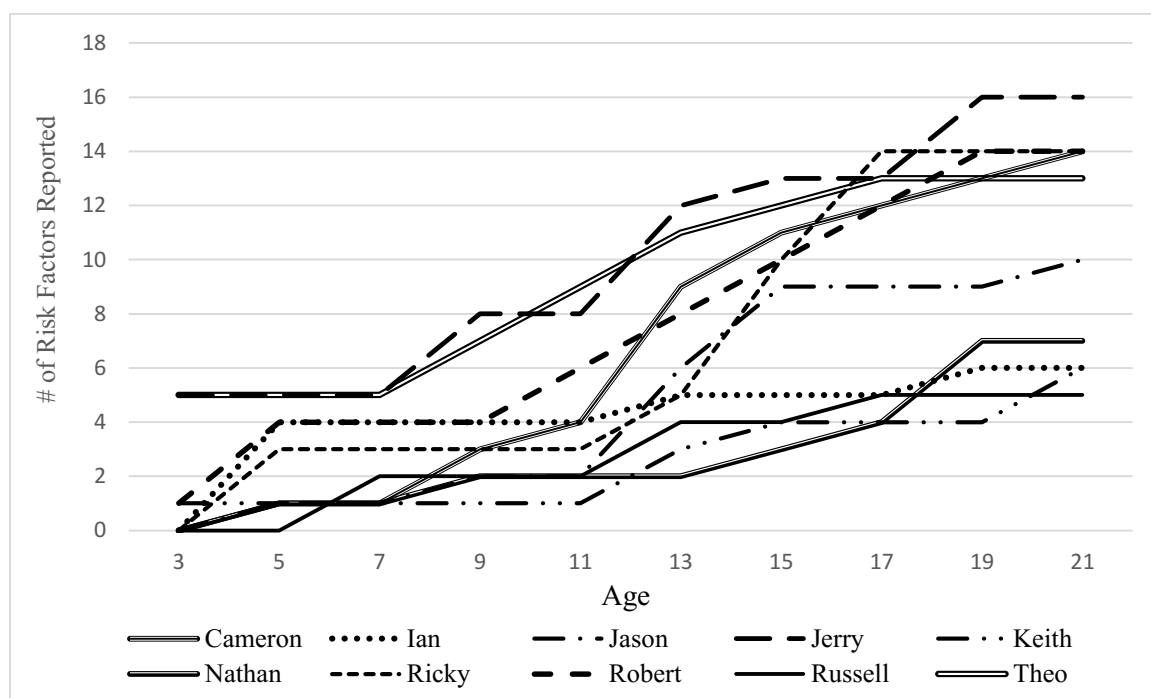
Although scholars in several disciplines have identified numerous risk factors correlated with poor outcomes at school as well as incarceration, the underlying mechanisms are not well understood (Murray, Farrington & Sekol, 2012, NIMH, 2009, Rogosch, et al., 2010). Thus, I sought to strengthen theory regarding school-to-prison phenomena by documenting timing and sequencing of risk factors as well as participants' understanding of how their experiences may relate to their school outcomes and incarceration. To integrate the two distinct kinds of information generated via life graphs and interviews, I employed a spiraling analytic strategy (Creswell, 2013).

Analysis of life graphs.

I began by transcribing the life graph portion of each second interview and configuring the cards according to the record.⁹ Because participants offered timing in a variety of forms, I converted all reports to age, using the following schema: references to early memory (e.g., “for as long as I can remember,” “before I went to school”) were assigned to age 3-5, consistent with literature on explicit memory development (Newcombe, Drummey, Fox, Lie & Ottinger-Alberts, 2000); references to grade level were converted to age using the assumption that participants entered kindergarten at age 5-6 and first grade at age 6-7; references to middle school were associated with an entry age of 11-12 and references to high school were associated with an entry age of 14-15,

⁹ Picture-taking is generally forbidden in the prison context; I was required to check my cell phone and computer on entry to RRCC. In order to reconstruct the life graphs, I described the order for the audio recording.

Figure 2. Number Risk Factors Accumulated over Time by Participant



Analysis of interviews.

First and second interviews were transcribed and uploaded to Atlas.ti 7.5 as separate primary documents for purposes of coding. Due to my interest in informing theory, I applied grounded coding (Charmaz, 2006, Charmaz, 2010) to first interviews, generating 820 process and *in vivo* codes. To identify themes and relationships, I applied focused coding, a form of axial coding that results in grouping codes into broader categories with greater levels of abstraction (Saldaña, 2009).

To create a preliminary framework of focused codes (Saldaña, 2009), I turned to the study's conceptual framework (Ravitch & Riggan, 2011). This resulted in 17 initial categories, including ACEs, school and substance abuse. As I worked to associate grounded codes with themes, new constellations emerged. For example, there were many references to vocational training in prison, jobs held by participants both during their school years and as adults, and professional development activities including union apprenticeship, employer-sponsored training, and certification programs; thus, I created a category called "vocation."

To further refine the categories and ensure alignment between codes and categories, I began to develop subcategories, again relying on the literature that informed the conceptual model. For example, the ACEs were derived from an historical cohort study of 17,400 adults that established the relationship between the prevalence and health-related sequelae of: child abuse and neglect; witnessing domestic violence; having a substance abusing, mentally ill or incarcerated family member; and parental divorce or separation (Anda, Butchart, Felitti & Brown, 2010). Participants here did report ACEs and sequelae as expected, but offered additional information; for example, they attributed

emotional pain, difficulty controlling anger, and “being lost” to their ACEs. Participants also added dimension to some ACEs. For example, parental divorce was not the end of the story for them; rather, contentious custody and visitation issues, recoupling, problems with step-parents, and conflict between siblings followed. In addition, a number of participants noted intergenerational transmission or repetition of ACEs, such as having divorced or incarcerated parents as a child and becoming a divorced or incarcerated parent to their own child. Thus, I added subcategories within “ACEs” to capture the full range of experience.

Based on the data, I re-conceptualized certain components of the conceptual model (Creswell, 2013, Ravitch & Riggan, 2012). For example, referral to special education is treated as a risk factor in school-to-prison pipeline literature (Wald & Losen, 2003), and was included in the array of life graph cards here. Only one participant clearly described being diagnosed with a learning disability and reported receiving special education. Nevertheless, one participant reported a diagnosis of Asperger’s and two reported formal mental health diagnoses. Five reported discussion between home and school related to ADD or ADHD. Several participants described difficulty with reading that resolved over time, with one exception. Three participants did describe being placed in a classroom with characteristics consistent with special education, such as a low teacher-student ratio. However, the participants attributed their placement to disciplinary action, “for kids who were always in trouble.” Although it is possible that several participants did receive special education, it is difficult to be sure, and it is not consistent with participants’ own understanding of school to assert this placement on their behalf. Therefore, I set aside referral to special education and instead added more

focused and descriptive categories: “disabling conditions,” “reading” and “school performance.” Within reading I named the subcategories “positive relationship to text” and “struggling.” Within school performance, I named the subcategories “having difficulty,” “performing successfully,” and “homework,” as several men connected their ability and motivation to complete homework to attentional issues or reading problems in the early years.

Further complexity emerged when I began to analyze the “school” category. For every participant who expressed generally negative feelings about school, there was another who expressed positive feelings. Robert told me schoolwork “made me look like a f***ing idiot” while Nathan declared, “I loved school!” And yet, Robert was deeply saddened when he was pushed out of school just shy of graduation, saying, “I always thought their goal was to see everybody through it, not push anybody out of it. So when I left, I felt really discouraged. Really discouraged.” In contrast, Nathan, the self-reported lover of school who eventually earned a Bachelor’s degree in computer engineering, said: “My parents kind of pressured me into staying in high school, which was kind of a bad decision. I think I would have done better if I had just quit high school and focused on my company,” an internet provider service established during the birth of public access to the World Wide Web.

Despite the lack of consistency among participants, patterns emerged between them. All participants reported strong school performance in some subjects during certain years under the guidance of particular teachers, and poor performance, attitude or behavior at other times or in different relationships. They made distinctions between reading and math, middle and elementary school, academics and vocational studies.

They reported engagement in classes they enjoyed, particularly science, and disengagement from classes and teachers they experienced as boring. In the face of this complexity, I could not reasonably hold school-related risk factors such as failing classes and truancy as a construct separate from school. Rather, I came to see school risk factors as subcategory of school.

Participants' experience of prison also proved to be nuanced. While the men clearly expressed the desire to be free and control their own lives again, they also described transformative, self-directed learning *from* prison. For example, Russell said: "I mean there are so many regrets that I'm in prison now, but prison has taught me a lot. I didn't like to wait. I think prison has taught me a lot of patience." Theo reported:

I never read a novel till I came to prison... [now] I read a lot of Hemingway. I just like the way the books are written, you know. I wish I would have started reading a long time ago. I like the way it just takes you away.

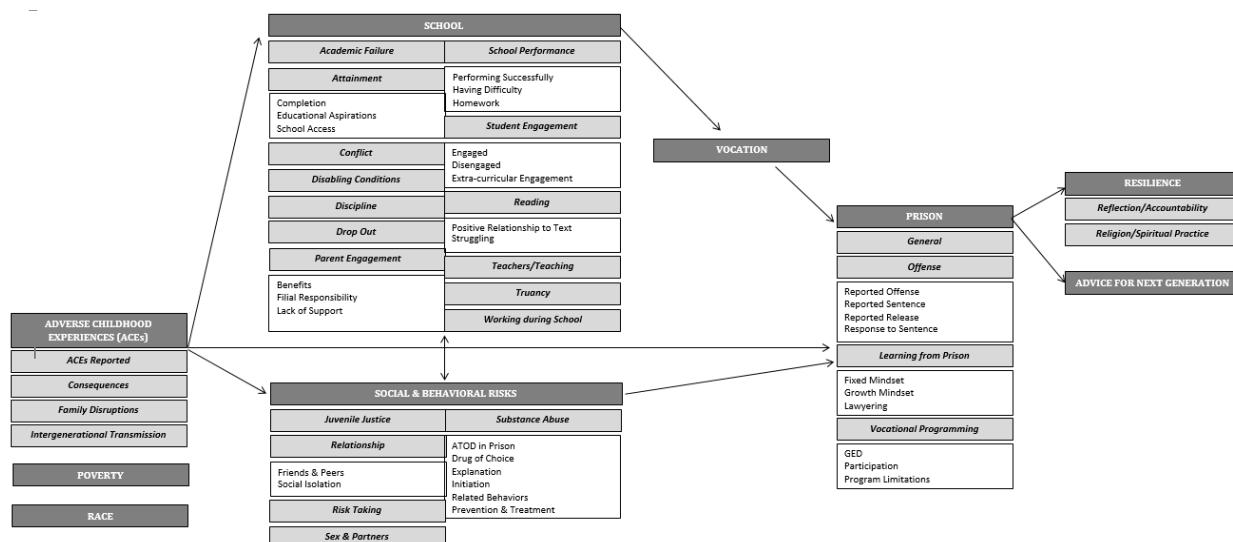
And Jerry described changes in his thinking:

I feel like there's so much open wounds in my life right now that it's hard for me to deal with a lot of things. But it is important for me to recognize that a lot of them things aren't my fault. I can only take responsibility for what I have done.

Focused coding of first interviews resulted in 9 categories, 34 subcategories and 31 themes. These were linked to the grounded codes and associated quotes, then applied to second interviews. Because second interviews were focused on risk factors and drew attention to specific issues not necessarily raised by participants in first interviews, I expected that new categories would emerge. Approximately two dozen new codes materialized, but for the most part, these were variations on established themes; for example, seeking treatment for mental illness can be viewed as an extension of mental health diagnosis under disabling conditions. However, second interview data did lead to

establishing resilience as a category, with religion and spirituality as a subcategory, consistent with Werner and Smith (2001).

These modifications result in this constellation of codes, which may also be viewed as the final conceptual framework:



Findings

Timing, Sequencing & Accumulation of Risk Factors

Participants experienced a range of 5-15 risk factors, with a mean of 11 (Table 2). The timing, sequence and accumulation of these risks were derived from participant life graphs and interview questions about them. Except for Russell, the men's risks spanned all three categories in a sequence consistent with the conceptual model: first, ACEs, emerging on average in the pre-school years; second, school risks, beginning on average in early middle school; and finally, social and behavioral risk factors, occurring for the first time in late middle school, on average (Table 3).

Table 2. Number of Risk Factors Reported, by Participant

Participant	# ACEs (8)	# School Risk (7)	# Soc/Behavior (6)	Total (21)
Cameron	4	6	5	15
Ian	5	1	1	7
Jason	2	4	4	10
Jerry	6	4	5	15
Keith	1	3	4	8
Nathan	1	3	4	8
Ricky	4	5	5	14
Robert	5	4	6	15
Russell	0	3	2	5
Theo	6	3	4	13
MEAN	3.4	3.6	4.0	11.0

Table 3. Mean Age at First Incident of Risk Reported by Life Graph

Adverse Childhood Experiences (ACEs)		School Risk Factors		Social/Behavioral Risk Factors	
Risk Factor	Age (in yrs)	Risk Factor	Age (in yrs)	Risk Factor	Age (in yrs)
Parent Mental Illness	3.0	Held Back	11.5	Juvenile Detention	13.0
Parental Sub Abuse	3.5	Suspension	12.0	Marijuana Use	13.1
Domestic Violence	4.3	Failed Classes	12.6	Smoking	13.8
Sexual Abuse	5.0	Truancy	12.8	Other Drugs	15.1
Physical Abuse	5.2	Special Education	13.0	Selling Drugs	16.1
Verbal Abuse	7.0	Alternative School	16.0	Paternity before 19	16.8
Incarcerated Family	8.0	Drop/Push Out	16.8		
Divorce/Separation	8.3				

Table 4. Frequency of Participants Experiencing each Risk by Category

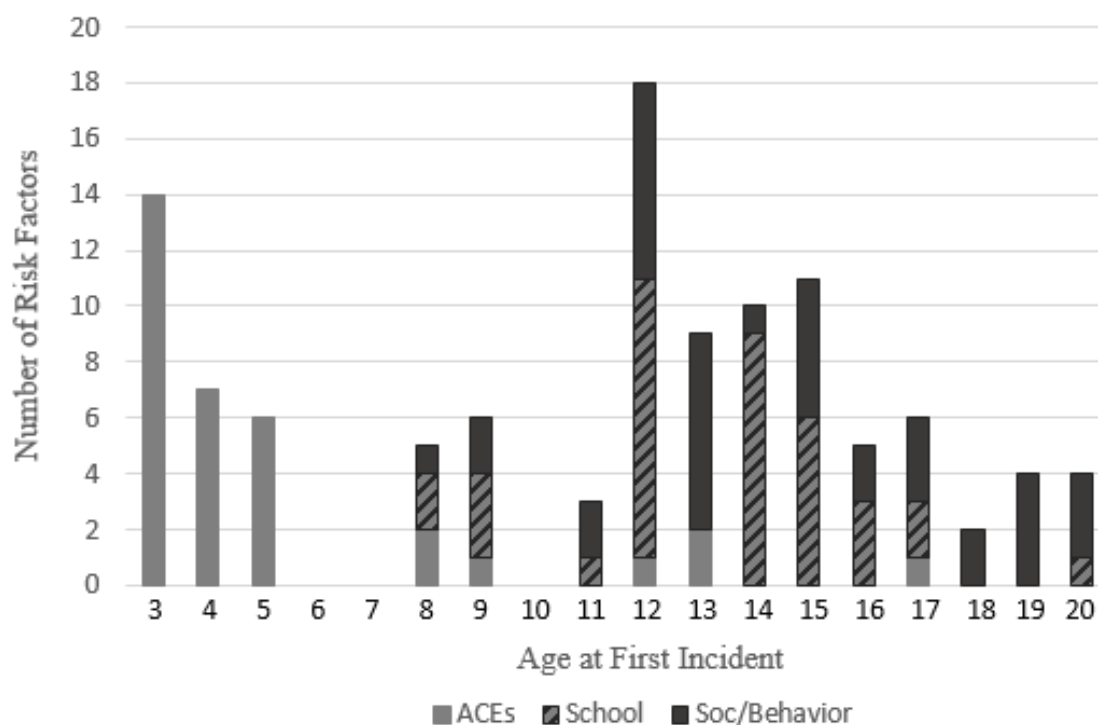
Adverse Childhood Experiences (ACEs)		School Risk Factors		Social & Behavioral Risk Factors	
Risk Factor	# reporting	Risk Factor	# reporting	Risk Factor	# reporting
Divorce/Separation	7	Truancy	10	Smoking	8
Parent Sub Abuse	6	Failed Classes	8	Marijuana Use	8
Incarcerated Family	5	Suspension	7	Other Drugs	8
Physical Abuse	5	Drop/Push Out	6	Selling Drugs	7
Domestic Violence	4	Special Education	2	Juvenile Detention	5
Verbal Abuse	4	Held Back	2	Child before 19	4
Parent Mental Illness	2	Alternative School	1		
Sexual Abuse	1				

Truancy, reported by all ten men, was the most frequently reported risk factor, followed by failing classes, smoking, using marijuana and using other drugs, which were each reported by eight men. The most common adverse childhood experience reported was parental divorce or separation followed by parental substance abuse (Table 4).

ACEs began early for the men, who report family violence “from when I was really little,” “for as long as I can remember” and “before I went to school.” The early years of school were relatively free from new risk factors; however, ACEs did continue at home. At entry to middle school, the majority of participants began to experience school risk factors related primarily to truancy, suspension and failing classes, as well as social and behavioral risks related primarily to ATOD use. This is unsurprising, although not fully anticipated, as puberty is associated with an increase in sensation-seeking or risk-taking that persists for a few years before tapering off (Steinberg, 2014). Importantly, 27% of all accumulated risk factors occurred for the first time during middle school and 16% occurred when participants were 12 years of age, more than another other year of life. Figure 3 illustrates this pattern of accumulation.

For participants experiencing violence at home, middle school was important because “it stopped when I was twelve, thirteen.” Some used their freedom and mobility to avoid conflict, “Why be in a confrontation when you know you can be somewhere else?” Others became worthy opponents to be respected, “My dad still had a wicked anger problem until—I don’t know—until I was 13. Till I got bigger and then he couldn’t push me around.” For some, though not all, domestic violence against their mother also came to an end at this time because “I wouldn’t let him” harm her.

Figure 3. Accumulation of Risk Factors by Category at Age 3-20



ACEs and School

For the most part, ACEs began prior to or at entry to the school; a few parents got divorced during high school, and one mother was sent to prison the summer after her son completed eighth grade. But interpersonal violence, mental health issues and substance abuse started early and persisted into the school years. Participants believe, “[A] lot happened before I even went to school, you know, in my family setting that affected my schooling.” And when asked about school experiences, participants routinely connected them to ACEs at home.

Theo raised issues of parental substance abuse, physical abuse and domestic violence when asked how his parents responded to his “frequent” behavioral trouble at school. “My dad was an abusive alcoholic, so you know, he would talk with his fists. And my mom would try to hide the fact. She would try to take the beating herself. And

she couldn't." After Theo's parents divorced and his mother moved across the country for "safety reasons," Theo attended a rural school. After a long-term suspension from eleventh grade for distributing drugs on the school campus, Theo did not return to nor graduate from high school.

Jason experienced a serious downturn in performance when he reached middle school. When asked whether anything at home triggered this change, he introduced an intergenerational family history of mental illness and substance abuse:

There was not ever any physical abuse, no real verbal abuse... [My father] would be like, "Boy, why are you doing this? What are you doing? Why are you making me so crazy?" My parents are still married. They have both been through counseling. I know with my mom there's all sorts of mental issues on her side of the family: depression, schizophrenia, all sorts of medical problems. Same on my dad's side of the family. Alcoholism and all that, very prevalent. Surprisingly, they both did very well.

Subsequently, Jason was diagnosed with ADD and a learning disability; he was referred to special education, and earned his high school diploma on time.

Ricky was suspended from school for the first time in seventh grade; he had stolen marijuana from his "parents' stash" in order to "impress" a girl he liked. In describing his parents' response, Ricky revealed intergenerational substance abuse and provision of drugs to minors, a form of child abuse under his state's laws.

My mom used to bribe my friends sometimes, because she had horses. So she'd be like, "Hey, I'll let you have some weed if you guys go pack hay around for four hours, half a day." It was cool. I never really had issues with weed. I'd just get kind of stoned. Like some people get addicted to it or whatever, but it never really caused me problems. Like I never stole for it. I functioned well on it. It might because I'm ADHD.

Ironically Ricky's parents refused Ritalin for his condition as his mom "didn't want to have a kid who was on pills, you know?" Ricky was subsequently placed in "special ed for kids who were always in trouble." He performed well in this setting because the

teacher, who had six to 10 students in the class, “Always asked how my day was, what’s going on, why were you absent and stuff like that. You know for me, when somebody cares like that, I don’t know, it’s hard to feel like I’m letting them down.” After moving on to vocational school, Ricky was suspended and did not return. It was “tenth, eleventh grade. Something like that.”

Centrality of Drugs in Participants’ Lived Experience

Substance abuse played a central role in the participants’ lives, including their incarceration. Jerry explains the inter-relationships between substance use and other impairments as well as any scientific study:

I’d cuss [teachers] out, tell them bad things. I didn’t want to be there. I didn’t want to be controlled. So much pain was going on inside me. I didn’t realize. I didn’t know how to deal with it. The only way I could really cope was to get loaded, to medicate myself. And I couldn’t do it in front of a teacher telling me what to do.

For these men, substance abuse issues often began at home. Six of the 10 reported an alcoholic or drug-using parent. One who did not report parental addiction said, “It was a big party scene. Party, party, party.” Another said, “They’re not alcoholics. Like I don’t know...they drink five days a week, but it doesn’t affect their lives. They’re home at 8 o’clock, go to bed, go to work every day. So I guess it doesn’t cause them problems, like most alcoholics.” Many were introduced to drugs by family members: “[My parents’] way of thinking about it was, ‘He’s going to smoke weed anyway. I’d rather he be at home.’” “Probably 12. I got buzzed. It’s when my aunt first introduced me to pot and to partying.” “My grandmother was like, ‘I know you don’t like taking the Ritalin and there is something I really should tell you. Ritalin is a dopamine inhibitor and so is marijuana.’”

Eight participants identified themselves as addicts. For them, ATOD use was not just a pathway to prison, but a major thoroughfare. As Ricky explained:

It's just when you become a drug addict, you don't mind all those walls. It's so hard to explain to people. I used to be like, 'What's wrong with you? Stop stealing. Stop doing all these drugs.' But when you actually do it...it's a lot harder. [Addiction] takes away everything that's your personality.

Two men with addiction were serving time for a property crime aimed at funding their drug habit, and six were serving time for drug manufacture, possession or distribution.

The ninth was convicted for trespass with intent to engage in drug-related activities; however, because the state's appellate court has agreed to hear an appeal on the drug component of the case, I report it here from the participant's perspective, as simple trespass. Two participants had never used illicit drugs. Of these, one was convicted of a white collar offense unrelated to drugs, the other was convicted on a "controlled buy;" that is, selling a substantial amount of drugs to police officers.

For the eight drug users in the study, early ATOD use was often supported by theft. For example, Cameron was "stealing packs of Marlboros and Camels from my mom" by fifth grade. For some men, stealing escalated along with their drug habit, Ricky explained:

I'm down for identity theft, basically because I was out there getting high and I would dig through people's cars. Stupid things that I'm not proud of now, I'm embarrassed about now. But I used to break into cars and take people's checks. I'd write their checks and use their credit cards.

For others, growing into adulthood and getting jobs, allowed them to pay for their drugs, at least temporarily. As Jason, convicted of a drug-related burglary explained, "Then, after I got laid off, I started using more. Then, I was going broke. So, I started selling it. And then, yeah, this whole other [burglary] thing."

While theft provided fairly direct access to ATOD, many participants viewed dealing drugs as “just a business,” “my career, salesman of illegal drugs.” At age 15, Robert was encouraged to expand his business:

My mom figured out there was a lot of money in it and she saw me selling a little to my friends and people who were running in the house. So she has always been really money oriented. So she was like, “How much do you sell it for? How much do you get it for? Okay, go get me that! And then sell this for me. So I would go get a whole bunch and we would break it down and sell it little.

Theo was engaged in a family heroin enterprise: “My brothers did it. My cousins did it. Our friends’ brothers did it. It just looked cool. And then I went to Oregon and there was real no market in the high school. So, I created it.”

However, only one participant was able to keep his business separate from using. For the others, “We were selling drugs and getting high. Just kind of goes together.” For many, selling was the function of habitual use or addiction as it “pays for your habit, at least.” For these men the connections among drug use, illegal activities and prison was clear. As Keith said, “I wouldn’t be here if it wasn’t for drugs...I wouldn’t be in prison if I never used drugs.”

For these men, controlling addiction is central to their future. Relapsing is a violation of the “J & S,” the judgment and sentencing document that sets terms for early release; a positive drug test during post-release community supervision results in return to prison. Re-offense is also common. “I saw a guy get out and he was back in three weeks for the exact same thing. He was selling drugs again.” “Yeah, I want to stay out. So this is part of my plan.” But resistance is hard: “A lot of things I gotta stop doing, a lot of people I have to stop hanging out with.”

Staying clean is hard work. As Jerry said, addiction

is a vicious disease. And it's centered in the mind. And if you can control it at that stage, then the active use doesn't come into play because you're intervening. I call it prelapse. Catch it in the prelapse stage of my thinking, then I can do something about it, if I intervene strongly.

Otherwise, the men agree, "I don't know what will happen in the long run."

Discussion

Complex Trauma

Interpersonal violence and parental substance abuse or mental illness that harms a child or interferes with meeting his or her basic needs sets the stage for a form of developmental disorder known as developmental trauma disorder or complex trauma (DeBellis & Zisk, 2014). Absent safety and responsiveness, children suffer "a loss of core capacities for self-regulation and inter-personal relatedness" (Cook et al., 2005, p. 390). Essentially, the organization of "self," including an understanding of how to reach beyond self and relate to the world emotionally and functionally is disrupted (van der Kolk, 2005). Functional impairments may occur in seven domains: attachment, biology, affect regulation, dissociation, behavioral control, cognition and self-concept (Cook et al., 2005). During childhood, impairment from complex trauma may not rise to the level of a specific mental health disorder, but it does increase the risk for: later mental illness (Anderson & Teicher, 2008, van der Kolk, 2005); addiction to nicotine (Anda, Croft et al., 1999), alcohol or other drugs (Anda, Whitfield et al., 2014, Anderson & Teicher, 2009, Dube, Felitti et al., 2003, Dube, Miller et al., 2006); and/or poor physical health across the life span (DeBellis & Zisk, 2014, Felitti et al., 1998). Through life graphs, participants documented complex trauma. Interviews offered substantive evidence of impairment in attachment, affect regulation, behavioral control and cognition.

Attachment.

Early caregiving establishes the lifelong foundation for relationship with others. Secure attachment fosters a sense of self and an understanding of the boundary between self and others, including the capacity to use internal resources to regulate emotion. Disorganized or insecure attachment is problematic for relationship formation, boundaries, and empathy. Social isolation is one indicator that the attachment relationship is compromised (Cook et al., 2005).

Study participants reported feeling “overlooked,” “slipping through the cracks” and were unable to identify any specific adult who made a difference in their lives. For Jerry:

Fitting in was so uncomfortable and awkward. I didn’t know how to fit in. I didn’t know where to fit in. So I became completely lost and the only way I could find attention in my life was by getting in trouble. By doing things that would attract attention to me.

Theo, “written off at every school I went to,” reported that teachers quickly “stopped sitting down and talking with me. They would send me to the principal’s office to be somebody else’s problem.”

Although many participants recalled a strong friendship circle in secondary school, most also reported peer rejection in the early years. This experience was particularly acute for the men who changed schools frequently and experienced poverty due to parental job loss, divorce and immigration. For Theo, “lunch time was a tough time. I always had the free lunch vouchers and other kids would make jokes.” Nathan found that “people treated me like I was stupider when I was with my mom. I was treated more like an equal when I was with my dad. Being with a single mom is different from being with a single, well-off father.” For Russell, who spoke no English when he

enrolled in American schools at age eight, “making friends was really difficult. I could say there were a little bit bullies or something like that back then.” Ricky identified “getting picked on a lot, getting bullied a lot...It just felt like I didn’t have no friends” as the “biggest challenge” he faced during his school years.

Affect Regulation.

Complex trauma interferes with emotional regulation. Showing no emotion and being overly-emotional can both be problems. One indicator of difficulties in this domain is avoidance; to prevent feeling or facing unpleasant emotions, the traumatized person will avoid situations or people (van der Kolk, 2005). In this study, participants “skipped A LOT of school,” “barely went to class, I barely attended school,” “skipped every chance I got.” While there was some amount of indiscriminant truancy, the men consistently reported avoidance: “It’s just that I didn’t want to be there most of the time. Because I don’t like this teacher, I don’t like this class.” Conversely, “I never skipped wood shop or anything like that.” “The teachers and classes I did like, I ended up going to. I—me and my friends—would skip most of the day, and I would be like, ‘No, I need to get back. I got drafting class. I want to go.’”

Although some participants reported success at school despite truancy, most experienced significant consequences, including detention, summer school, failing classes, being held back and suspension from school. But rather than re-engaging, they made efforts to skirt detection, for example, “I would have people sign sheets for me so I could get out school” and call-blocking the school’s attendance office.

Although truancy from school may be viewed as a behavioral control or cognition problem, participants’ expressed desire to avoid boredom, the discomfort of adult

authority, and unpleasant experience suggests avoidance. That participants made an effort to attend when classes or teachers evoked something pleasurable further supports this interpretation.

Behavioral Control.

Early trauma alters the stress system at the molecular and chemical level such that it becomes more sensitive and reactive to stressors (Andersen & Teicher, 2009). Thus, behavioral control becomes an important domain of impairment among those suffering developmental trauma. As Theo described,

I used to have a really short fuse in my life. You know, until I was 23, 24. I used to snap at anything. I wouldn't shy away from violence by any means. I come from a very bad household, so you know, it seems like the thing to do. You know, somebody pisses you off, you hit 'em.

Fighting was common and easily provoked. "If a stare occurred, we would probably be in a fight without having any words spoken...Just a stare. Just a stare down. That person would have thrown their fists." Fisticuffs resulted in suspension from school as well as entry to the juvenile justice system, "I got in a fight at school. So I got locked up the first time. I did like five days and then my dad bailed me out, then I went back and I had to do like 15 more days."

For a number of men, fighting also cut their education short. For example, "So, the reason I got kicked out of school was because of the fight. I got expelled for the rest of the year and I was supposed to come back the next year, but I never did. So after that, I ended up dropping out. Unfortunately." "I just didn't about care school at all, to the point I was completely kicked out for fighting. I was always combative with the teachers. They didn't want me there because I was so disruptive." "They finally just

kicked me out for good. I got caught with drugs at school and that was the last straw. I had got in a lot of trouble for fighting and what not. Finally, they were done with me.”

Behavioral control issues do not always involve violence. Opposing authority, “difficulty understanding and complying with rules,” (Cook et al., 2005) is also indicative of impairment in this domain. Among these men, opposition was a common refrain:

I just didn’t like the fact of being told what to do, how to live your life, you know you gotta get up at 6 o’clock in the morning, you gotta go to school, you gotta sit there and do anywhere from 6 to 8 classes a day. And you gotta do it.

Although the participants “hate being told what to do,” many expressed growth in this area. Cameron told me: “I don’t like authority...I hated being told to do stuff when I was growing up. I still hate it. But I have to deal with it. I got myself stuck in this position.” Similarly, Theo said: “Education was my enemy, or so I thought...Just fighting the whole system. I don’t like being forced to do anything, and here I am. You know, the world makes a big circle on you like that.” In fact, several expressed extending greater effort to control their behavior as a result of incarceration:

When I started reading all the paperwork they give you when you first get to prison, it dawned on me, like I don’t want to go to any other prison. I want to go to work camp. I want to be able to work. I want to be able to move around more freely, not be stuck in a 12 by 12 cell with one other person, or 4 other people. And stay in the cell when they tell me, ‘Okay, main line’ and the door opens. No, it wasn’t for me. So, yeah, I had to buckle down and [complete my GED].

Cognition.

Trauma in childhood “sculpts the brain” (Teicher, 2002), affecting the development of cells and synapses, and reducing the size and functionality of several regions of the brain including the corpus callosum, hippocampus, amygdala, and cerebellar vermis (Teicher, et al., 2003). Therefore, it is unsurprising that complex trauma is associated with difficulty at school and dropping out as well as specific

cognitive challenges, including attentional problems and difficulty sustaining curiosity (Cook et al., 2005). As previously documented, the majority of participants in this study dropped out or were pushed out of school. Some expressed disinterest in or disdain for school. And the majority referred to themselves as “having ADD” or “being ADHD.”

Sustaining focus did challenge some participants. As Robert described middle school:

You’re only there for what? 45 minutes? So you sit down, open up your book, listen to your social studies teacher and you’re supposed to do your work, and you’re distracted by all your friends and all these girls, and then you’re off to your next class, and you didn’t really do nothing.

Others disengaged completely, “Not enough stuff going on that would be interesting to me. So I was either skipping or I was sleeping. Then I didn’t turn in my homework.”

Participants had difficulty finding relevance in school work and reported little capacity to sustain curiosity within the school context as “It was kind mind-numbing the way they made you do things over and over.” The teachers “just talk and talk and talk,” “looking in the rear view mirror, looking at things that aren’t relevant.” However, “if the subject interests me, I’m all ears.” The promise of “the experiment” kept many participants interested in science. Hands-on learning, including not only shop, but course work mixed with work experience also generated a sense of interest and engagement.

Improving Schools

At the end of first interviews, I asked participants how they might improve schools so that “all students are successful.” Because most asked for time to think about the question, I concluded second interviews by asking again. Many answers were remarkably complex. For example:

THEO: I think it all starts at home, really. If the home life’s messed up, there’s really nothing the school can do. People like to blame them, you know, as a

scapegoat. Parents like to blame the school but if the home life's messed up, if the parents don't make the kid study, make the kid do homework, keep the kid interested, give him incentive to do well, then it's just a lost cause... Maybe the government could offer tax breaks to families whose kids do well in school.

RICKY: I was just kind of thinking, making some things incentive-based. So, like if you've got your head on straight and you're trying really hard at school, and you're really doing all this to get your diploma, then that's your incentive. But, this other group that they don't care about a high school diploma, they're doing it about other things... So if like you complete this quarter and you pass all these classes, you get you get a free period in the next quarter.

Chronic feelings of ineffectiveness.

Complex trauma affects several developmental domains. The results may be seen by outsiders as emotional dysregulation or anti-social behavior. But the on-going consequences of trauma are also experienced internally in various forms, including “chronic feelings of helplessness” (van der Kolk, 2005). Creating the conditions to end feelings of ineffectiveness is central to participants' recommendations to improve schools.

Evidence of feelings of effectiveness are present throughout participants' descriptions of school. Although most participants reported being in trouble “a lot,” most were flummoxed by their experience: “For some reason I've always been a trouble maker. I don't know why. I always got in trouble.” Being in trouble generated a need for validation, as Ricky explained:

Congratulations when you do something right [makes you feel cared about]. You know, you shouldn't really need to be congratulated. But you know, when somebody is always screwing up, and does something right, it's nice to know you're doing something right. You know what I mean?

Even though participants “really tried hard,” results could be elusive.

My math. Ack! My math is crap. And even my language arts skills, like writing apostrophes, I still have trouble with that kind of stuff. But by the time I was in fifth grade, they say I was reading at a tenth grade level.

It was difficult to see an effective path forward:

My friends were all smart and whipping right through it. And I just wasn't getting it. I was like, 'How are you getting all this? I don't understand.' And they were whipping right through it. Even the ones that did drugs.

Even Ian, the participant working towards a doctorate at the time of his arrest, said, "I was never smart enough to be in an AP class" despite taking AP courses.

Within this context, participants noted "getting lost," "being overlooked" and longing for individual attention that was simply not available:

She had a lot of students in the class. She could only help you so much. She only had so much time in each student. There were times when I was like, I need help with this, but she was helping someone else on that.

Lack of one-on-one time furthered participants' disengagement and social isolation. For example:

He's not going to have time to go one-on-one with you if you have a question. If you've got a question, you got to raise it up in front of everybody and then everybody is going to be told. So it basically puts you on the spot.

Remedies.

As remedies, participants recommended "smaller class sizes" and "better tools." Several, drawing on their experiences as parents, suggested that computer technology might opportunity for both remediation for young people who need it, as well as a pathway for full engagement: "The new little games from Dora the Explorer or Sesame Street and the little Leap Frogs. If we had that when I was growing up, I think there would be a lot more kids who are smart."

By and large, participants recognized that their home experiences placed them at some kind of risk within school and perhaps beyond. A number spoke of the need for "prevention," "intervention" and being trained to "recognize red flags." Jerry summarized the kind of thinking that's needed to make this type of improvement:

Programs like that need to be implemented that open the closed mind to this epidemic pitfall of childhood abuse and what happens to the child

when the parents separate. It's not that child's fault, it's unfair suffering. So it starts at a very young age. And if it can be caught and redirected, then in school the person is going to do so much better. Better because somebody cared enough and was smart enough to develop some kind of system to: reach that person, and penetrate through the pattern of thinking, and the pattern of being lost, sucked into this world of not knowing how to get out of certain things, and not knowing what direction to go.

Implications

Developmental Cascades

By providing in-depth information about the accumulation, timing and sequencing of risk factors in their lives, these incarcerated men offer a glimpse into how their development has unfolded. At times, that development turned on family experience; at times, it turned on their school experience. For the most part, however, participants describe how the various domains of their lives intersect and interact over time to produce a life course resulting in incarceration. Their descriptions are consistent with developmental cascades.

Cox, Mills-Koonce, Propper & Gariepy (2010) describe developmental cascades as a systems dynamics approach to understanding human development. “The metaphor of cascades, as in tumbling water that increases in speed and force as it is altered by, and alters, rocks in its path, captures some of the dynamic and transactional qualities of development” (NIMH, 2009, p. 2). Developmental cascades help to explain “adaptive and maladaptive behaviors spread over time to promote or undermine development” (Masten & Cicchetti, 2009, p. 491) and “encompass a broad array of phenomena from the molecular to gene by environment interactions, and may occur across levels, domains or functions in a developing system” (Masten & Cicchetti, 2009, p. 492). Timing and sequencing of risk, though rarely available in large data sets, constitutes a critical factor

in understanding how developmental cascades unfold (Cox et al., 2010, Obradovic, Burt & Masten, 2010, Teicher & Parigger, 2015, Van Lier & Koot, 2010). The primary characteristic of the developmental cascade is the transactional nature of development (van Lier & Koot, 2010); for example, “symptoms of problem behavior in one domain are hypothesized to undermine function in one or more other domains” (Moilanen, Shaw & Maxwell, 2010, p. 2).

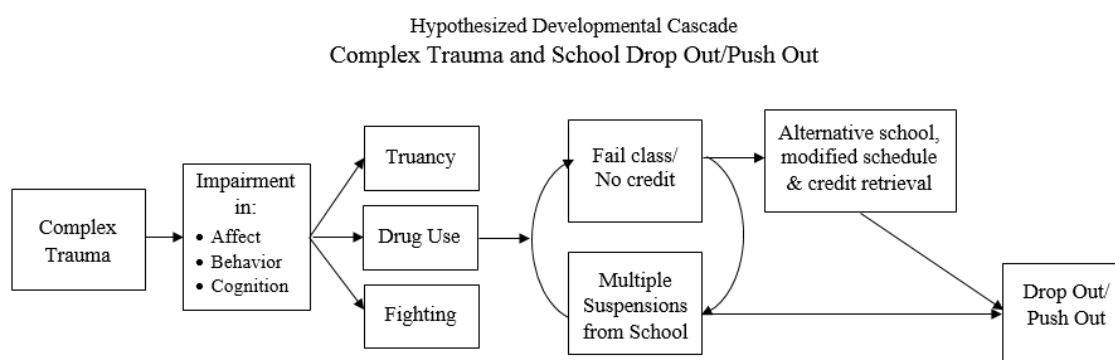
In a developmental cascades model, developmental conditions have consequences across domains and time. Their effects may be direct, indirect or re-enforcing (Cox et al., 2010). As an example, by disrupting the child-caregiver relationship, parental substance and domestic violence constitute each constitute developmental risk for children. When they co-occur, many risks escalate (Anda, Felitti et al., 2006, Felitti et al., 1998).

Although it is common for substance abuse to occur in the absence of domestic violence, the opposite is unlikely; domestic violence almost always co-occurs with other ACEs, and substance abuse is a frequent co-morbid condition (Whitfield, Anda, Dube & Felitti, 2003). Co-occurrence can have a re-enforcing effect; for example, substance use may reduce inhibition with respect to violence, and substance use may follow violence to numb feelings of shame. Participant reports here are consistent with this view. Re-enforcing loops are denoted in the models below as circular arrows.

By their sequencing of risk factors, participants suggest a number of potential developmental cascades worthy of further consideration. Two of these are modeled below. The first traces a path from developmental trauma at home to educational outcomes. Here, participants express impairments in the affective, behavioral and cognitive domains manifested as chronic truancy from school, early and chronic drug use,

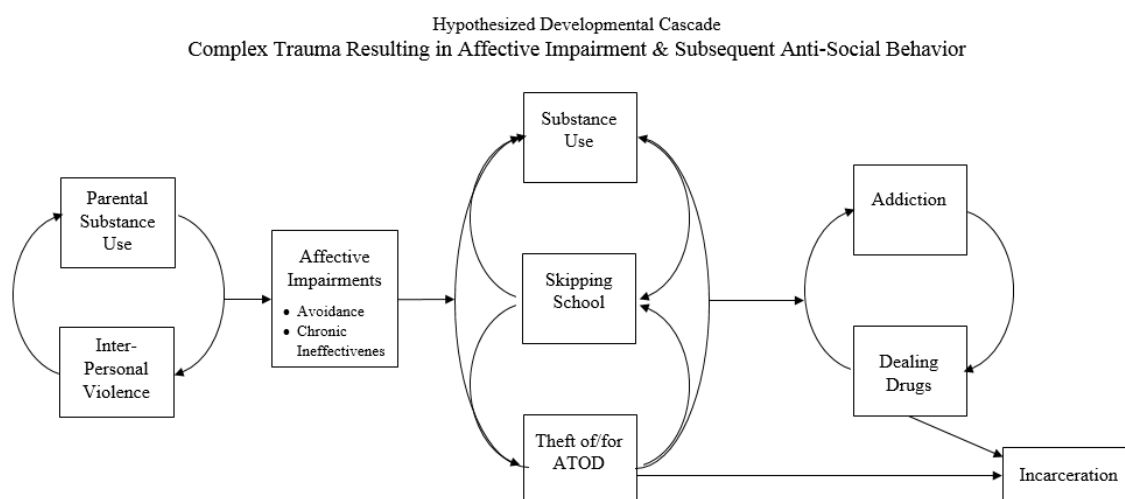
and fighting. These behaviors resulted in two outcomes in the school domain: failing classes and/or failing to earn credits towards graduation in secondary school, and suspension from school. Participants who failed at the primary objective of the school domain—earning credits towards graduation—pursued a number of alternatives to correct the situation, including participation in an alternative or vocational school setting and engaging in a modified school schedule that included course and work experience during the regular school day. In most cases, the school helped to facilitate these placements; in several cases suspension from school was coupled with revocation of the alternative with participants describing the outcome as push out instead of drop out.

While it is possible that credit retrieval alternative might generally, or frequently, result in graduation, no participant in this study described that pathway. Similarly, it is possible that students who experience multiple suspension might graduate, none of the four participants who graduated from high school reported multiple suspensions. Instead, those who reported suspension, reported that it occurred only once, early in middle school.



The second developmental cascade suggested by these incarcerated men traces the path from complex trauma to incarceration. Here, the re-enforcing loop of parental

substance abuse and domestic violence results in the specific affective impairments of avoidance and feelings of chronic ineffectiveness. Participants report that they regularly skip school in order to avoid the unpleasant experiences of not fitting in, being bored and not finding relevance in schooling. While truant, they engage in a number of activities, often involving the outdoors and risk-taking, such as jumping off of railroad trestles into a river below. In addition, they regularly report substance use while absent from school. Some, though not all, report skipping school in order to engage in drug use outside the watchful eye of teachers. Most report that they were introduced to drugs by members of their family, including mothers, grandmothers, aunts, cousins and older siblings. While some reported enterprising methods for supporting their ATOD use, such as collecting aluminum cans and pooling lunch money with friends, most report petty theft. During their middle school years, theft generally consisted of stealing money from a parent's wallet, taking packs of cigarettes from local vendors or taking drugs directly from a parent's or sibling's "stash." In some cases, skipping school and acts of theft resulted in incarceration in the juvenile justice system.



Although participants described early ATOD use, most distinguished “partying,” “self-medicating” and “getting high” as distinct from addiction, which emerged later and in the context of discovering their drug of choice. For most participants, introduction to their drug of choice occurred in the face of a high-stress event, such as the birth of a child or loss of a job, when a friend or associate offered more potent substances to help relieve depression, anxiety or distress. The most frequently named drugs of choice were amphetamines, including cocaine, crack, and methamphetamine. Two participants reported addiction to depressants, specifically heroin and marijuana. Each person reporting addiction also reported dealing drugs either to support their habit or to facilitate relationships with others who supported their habit. One individual incarcerated for his role in a large distribution network reported that he was addicted to “money, not drugs.”

The one participant whose offense was unrelated to drugs *and* who reported no illicit drug use in his life described his offense as the direct result of parental substance abuse and interpersonal violence. He described the crime as “a crime of anger, a crime of passion” as well as “retribution.”

Opportunities for intervention

These cascades suggests a number of opportunities to intervene in the lives of young people experiencing complex trauma. Although prevention of child maltreatment, parental substance use and other ACEs is desirable, as long as incidence persists, school-based interventions are warranted. As the men themselves suggest, personalized attention and tools aimed at increasing effectiveness in the classroom, both behavioral and academic, could improve outcomes. Efforts to reduce boredom and increase engagement, perhaps by integrating hands-on subjects like science and shop with the

basic skills of language arts and math, might alter this trajectory. In addition, new pathways to identify and act on chronic truancy as soon as it emerges are needed.

Participants' experience suggest that middle school is a critical period. Skipping, substance abuse, theft to access ATOD, suspension and failing classes all emerge during early adolescence. The cascades approach suggests earlier action to prevent the emergence of problems in middle school; it also suggests intervention at that critical stage to prevent cascading into additional domains at a later period.

Substance abuse is a clear and persistent problem for these men. They suggest that greater access to substance abuse treatment would have been useful to them. While it may be wishful thinking, a few believe that treatment could have prevented their incarceration.

Though seldom consulted, incarcerated men have a great deal to offer in terms of understanding the timing and sequencing of risk factors in their lives. Wider use of the life graph method could generate the data necessary to develop and test developmental cascades such as those hypothesized here. In addition to improving understanding of developmental cascades for individuals at risk of adult incarceration, such work may offer insight into the nature of needed interventions as well as effective timing of intervention. Application of the life graph technique with "deep end" populations such as incarcerated men may give us the opportunity to understand how high risk individuals themselves experience developmental cascades.

Limitations and Future Direction

Participants in this study represent only a small segment of men currently incarcerated in the United States. Because they are serving their first sentence in this state's DOC, they have short criminal histories. The study was designed to exclude

persistent and violent offenders, who represent a significant portion of the prison population (Carson, 2014). Future study is needed to understand whether the sequencing and accumulation of risk factors is substantially different for individuals who enter prison at a younger age, who have served more sentences or who have been convicted of more serious crimes.

Although most western states tend to hold few African American inmates when compared to states with large urban centers,¹⁰ black men are still over-represented in prison compared to the general population (Mauer, 2011). Black voices are absent from this study. Some states count Latino or Hispanic as an ethnicity rather than a race (see for example, <http://www.doc.wa.gov/aboutdoc/docs/msFactCard.pdf>) making it difficult to fully understand incarceration of this minority group; however, disproportionate incarceration extends to this group as well. Future study, regardless of its geographic location, will need to include a greater range of racial and ethnic minorities.

Participants' school records were not available. Most states do not link administrative data from these systems together, and the level of residential mobility reported by participants suggests it would be difficult to get records even if states did connect school and prison records. While participants were undoubtedly honest about how they experienced school, greater accuracy regarding their performance could be extremely helpful.

Retrospective self-reporting is generally assumed to result in under-reporting of risk factors (Brewin, Andrews & Gotlib, 1993, Hardt & Rutter, 2004), and there is some

¹⁰It is difficult to find a publication summarizing prison populations by state by race. However, the federal Bureau of Justice statistics makes its census data available here <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5387>.

evidence that participants may have more risk factors than they reported using life graphs. I was able to identify some omissions. For example, one participant repeatedly referred to “my father, well...my step-father” during his second interview even though he did not select the parental divorce/separation card. When pressed, he reported, “My mother was artificially inseminated...I grew up with two moms until I was 6 years old, my mom and a woman I now call [Auntie].” On the other hand, a participant mentioned going to foster care in his first interview, but did not select the foster care card in the second interview, a discrepancy I did not catch in real time.

In addition to omission, some risk factors presented did not resonate with participants sufficiently to trigger selection. Specifically, to meet the needs of the IRB, I did not specify physical or sexual abuse with the life graph cards, but rather used the generic term “unsafe at home.” While many participants selected this card, some did not. For example, one said, [My stepfather] “was an alcoholic, abusive. I didn’t like him.” But followed up with, “I didn’t feel unsafe, I just chose not to be around him. I could handle him. But why be in a confrontation when you know you can be somewhere else?”

These limitations suggest further refinement of the risk factors to be used in an array of this type. When asked is anything was missing, two men suggested homelessness. Teicher and Parigger (2015) intentionally added peer abuse (physical and verbal bullying) and family economic status as measured by having enough food and money when developing their recently published Maltreatment and Abuse Chronology of Exposure MACE scale, which measures timing and severity of ACEs.

Very early work with the Teicher and Parigger (2015) MACE tool suggests that understanding timing and sequencing of risk factors is critical to understanding outcomes.

They found that accounting for these factors accounted for more than twice as much variance in psychiatric symptoms than either ACE or the Childhood Trauma Questionnaire (CTQ). Thus, continuing to document the timing, sequencing and accumulation of risk factors in the future holds great promise for understanding how development unfolds, long-term health and treatment needs of individuals with complex trauma, and potential interventions.

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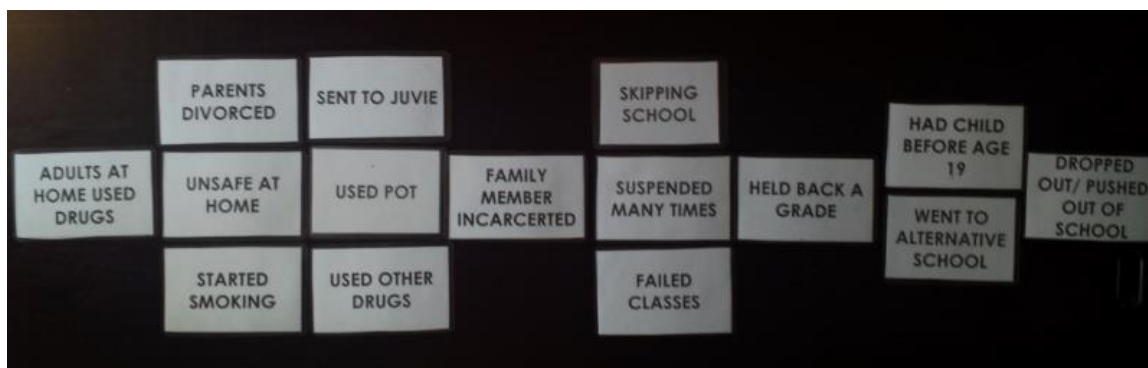
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APPENDIX A

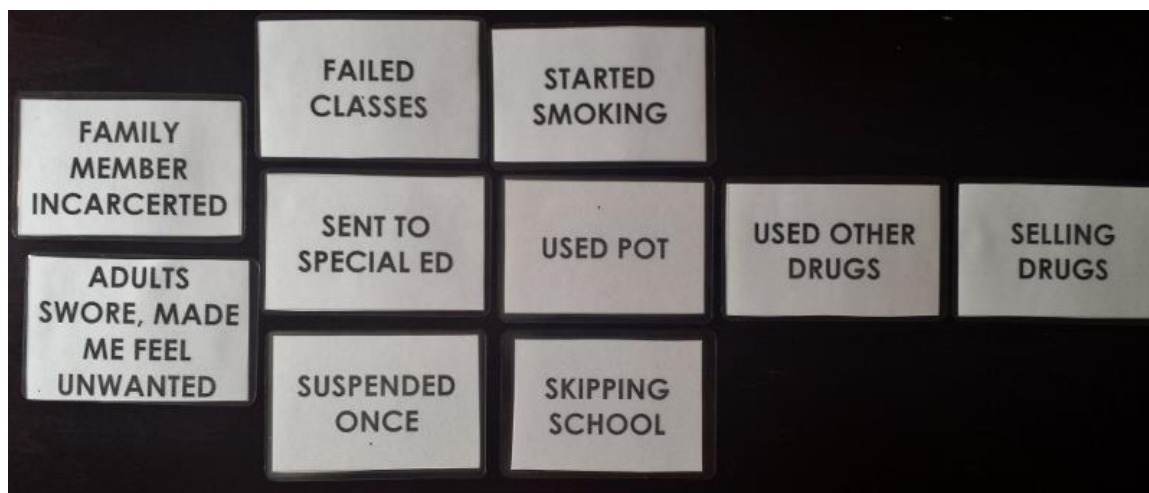
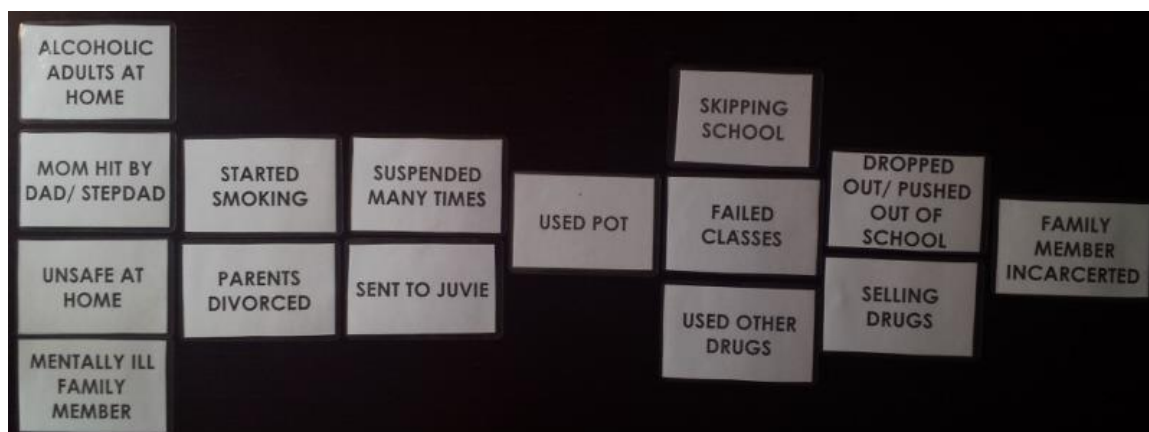
Participant Life Graphs

CAMERON

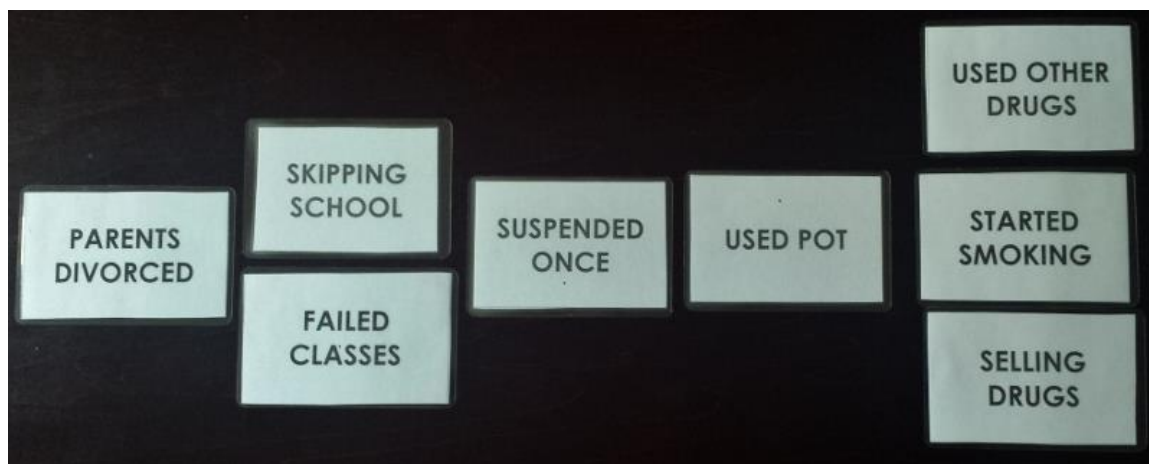


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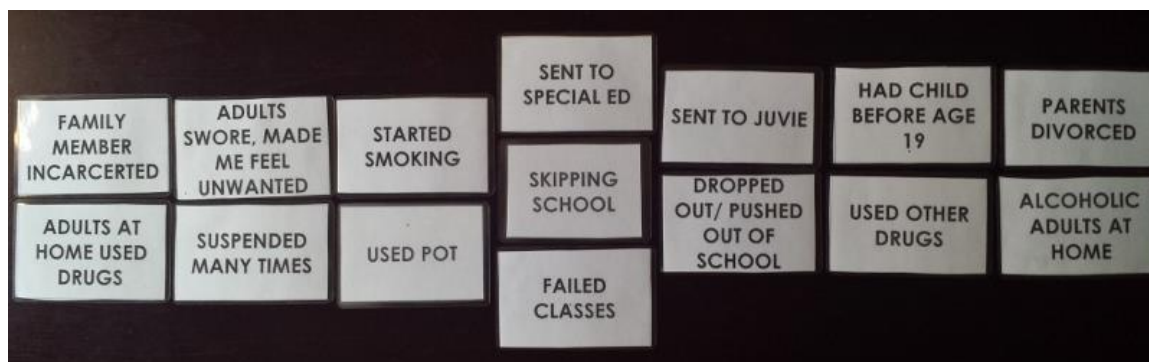


JASON**JERRY****KEITH**

NATHAN

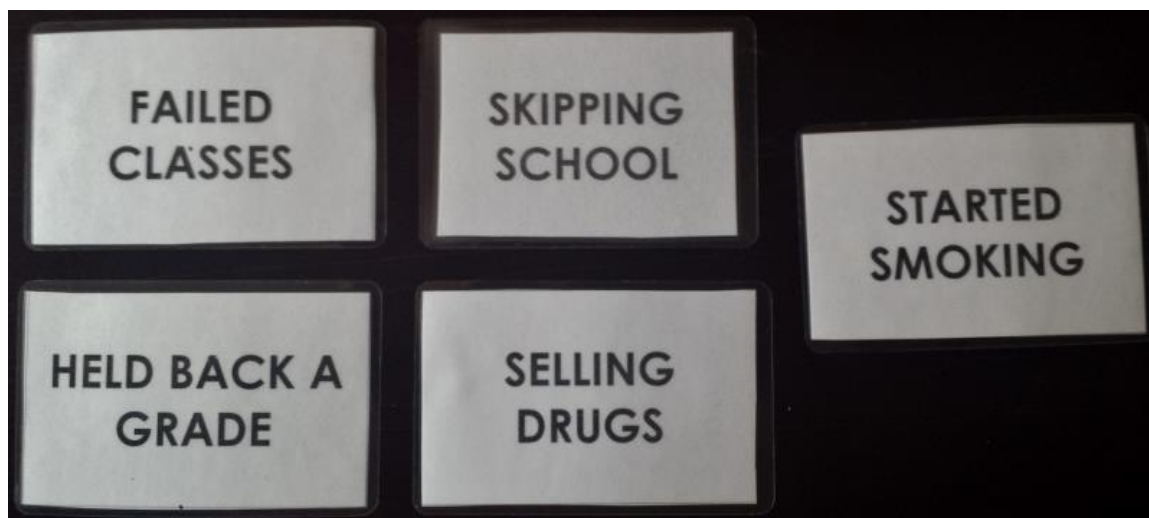


RICKY



ROBERT



RUSSELL**THEO**